User:

Thursday, 20/11/2008 3:34:31 PM

Julie Dawson

### **Process Sheet**

Customer

: CU-DAR001 Dart Helicopters Services

S.O. No. :

Job Number : 43604

**Estimate Number** 

: 10290

P.O. Number

This Issue

Prsht Rev.

First Issue

Written By

**Previous Run** 

: 20/11/2008

: NC

: // : 43487 Type

**Part Number** 

**Drawing Name** 

: D3121144

: BRACKET ASSEMBLY

**Drawing Number** 

: D3121 REV E : N/A

**Project Number** 

: E **Drawing Revision** 

Material

**Due Date** 

: 20/12/2008

Qty:

10 Um:

Each

Checked & Approved By

Comment

New issue KJ/DS

Est Rev:B ECN 1060 07-11-12 DD verified by:EC

: MACHINED PARTS

Est Rev:C New Dimensions for Blank Size 08-07-23 JLM Verified

By:EC

**Additional Product** 

Job Number:



Seq. #:

**Machine Or Operation:** 

**Description:** 

M174B1250X02000 1.0

17-4 SS Bar 1.250 x 2.00

Comment: Qty.:

0.3864 f(s)/Unit

Total: 3.8640 f(s)

Material: 17-4 SS Bar per AMS 5604/5643

(M17-4-B1.250 x02.000) Identify for D3121-114 Batch: <u>M 189</u>850

2.0

BAND SAW

BAND SAW



Comment: BAND SAW

Cut blanks: (1.250" x 2.000") 4.425" long

3.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3121-114 as per Folio FA330 and Dwg D3121 Identify as D3121-114

2-Deburr

3-Scribe batch number

INSPECT PARTS AS THEY COME OFF MACHINE

4.0

QC2



Comment: INSPECT PARTS AS THEY COME OFF MACHINE



Page 1

Form: rprocess

Dart Aerospace	L	_te	d
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	ospace	<b>-</b> '4							
W/O:			WO	<b>RK ORDER CHANG</b>	ES				
DATE STEP		PROCEDURE CHANGE			Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No		PAR #:							
	Re	solution:	_ Disposition	):	_ QA: N/C	Closed:		Date: _	
NCR:				ER NON-CONFORMA					
		Description of NC	Corrective Action Section			Ve	rification	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sigr Da	ነ&   ፍ	Section C Chief Eng		QC Inspector
				,					

NOTE: Date & initial all entries

Date: Thursday, 20/11/2008 3:34:31 PM User: Julie Dawson **Process Sheet** Customer: CU-DAR001 Dart Helicopters Services **Drawing Name: BRACKET ASSEMBLY** Job Number: 43604 Part Number: D3121144 Job Number: Seq. #: **Machine Or Operation:** Description: 5.0 QC8 SECOND CHECK Comment: SECOND CHECK 6.0 D312121 Bolt 20.0000 Each(s) Comment: Qty.: 2.0000 Each(s)/Unit Total: 1342530 Pick: Description Batch Bolt 343536( **Qty Part Number** 2 D3121-21 7.0 D3121241 Bearing Assembly Comment: Qty.: 2.0000 Each(s)/Unit Total: 20.0000 Each(s) Pick: Description Batch 243537 **Qty Part Number** 2 D3121-241 Bearing Ass 8.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1 Comment: SMALL & MEDIUM FAB RESOURCE 1 Assemble D3121-143 as per Dwg D3121. 9.0 QC5 INSPECT WORK TO CURRENT STEP Comment: INSPECT WORK TO CURRENT STEP 10.0 PACKAGING 1 PACKAGING RESOURCE #1 Comment: PACKAGING RESOURCE #1 Identify and Stock Location: 23 11.0 QC21 FINAL INSPECTION/W/O REI Comment: FINAL INSPECTION/W/O RELEASE Job Completion

Page 2

Form: rprocess

## **Dart Aerospace Ltd**

	. Johann								
W/O:			WC	ORK ORDER CHANG	ES	•			
DATE	STEP	PROC	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
						·			
							-		
Part No	) <b>:</b>	PAR #:	Fault Cate	gory:	_ NCR: Yes	No <b>DQ</b>	A:	Date:	
	Re	esolution:	_ Dispositio	n:	QA: N/C C	osed:		Date:	
NCR:		W	ORK ORD	ER NON-CONFORMA	ANCE (NCF	<b>R</b> )			
DATE	STEP Description of NC Section A					fication Approva	Approval	Approval	
DAIL			Initial Action Descript Chief Eng Chief Eng			Section C Chief Eng		QC Inspector	
							,,		
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NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	43604
Description: Bracket	Part Number:	D3121-114
Inspection Dwg: D3121 Rev: E		Page 1 of 2

# FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing		Actual			Method of	
Dimension	Tolerance	Dimension	Accept	Reject	Inspection	Comments
0.080	+/-0.010	.077	/		-	
0.300	+/-0.010	.300	1			
R0.375	+/-0.010	.375				
1.54	+/-0.030	1.540	V			
0.350	+/-0.010	.350	/			
R0.25	+/-0.030	.250				
Ø0.392	+0.002/-0.000	.393	/			
Ø0.201	+0.005/-0.000	-203				
0.100	+/-0.010	.100	V			
2.540	+/-0.010	2.540				
1.590	+/-0.010	1.588	/			
0.160	+/-0.010	.157				· · · · · · · · · · · · · · · · · · ·
0.400	+/-0.010	.400	/			-
1.220	+/-0.010	1.220	_			
1.600	+/-0.010	1.602	/			
3.80	+/-0.030	3.807				
1.800	+/-0.010	1.802				
R0.50	+/-0.030	,500	/			
0.130	+/-0.010	. /28				
3.41	+/-0.030	3.400	/			
3.65	+/-0.030	3.630	<u></u>			
2.24	+/-0.030	2.240				
45°	+/-0.1°	45-0	/			
R0.25	+/-0.030	,250				
3.97	+/-0.030	3.970	/			
		<u> </u>				
R0.38	+/-0.030	.380				
Ø0.392	+0.002/-0.000	. 393	/			
Ø0.201	+0.005/-0.000	.203	/			
0.268	+/-0.010	.268				
R0.260	+/-0.010	- 260				
0.080	+/-0.010	.080				
0.300	+/-0.010	.348	/			
0.381	+/-0.010	.381				
0.201	+/-0.010	.206				

DART AEROSPACE LTD	Work Order:	43604
Description: Bracket	Part Number:	D3121-114
Inspection Dwg: D3121 Rev: E		Page 2 of 2

FIRST ARTICLE INSPECTION CHECKLIST							
X First Article Prototype							
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments	
0.580	+/-0.010	,590					
0.400	+/-0.010	.410					
100°	+/-0.1°	1006					
0.032	+0.000/-0.010	.028					
			<u> </u>				

Measured by:	S mos	Audited by:	J.L	Prototype Approval:	N/A
Date: 09/0	2/13	Date:	09/02/17	Date:	N/A

Rev	Date	Change	Revised by	Approved
Α	03.12.08	New Issue P/O D3121-144	KJ/RF	
В	04.05.05	Dimensions changed/re-arranged per Dwg revision	KJ/JLM	
С	06.06.14	Dwg Rev. updated	KJ/JLM	
D	08.01.16	Dimensions updated per Dwg Rev E	KJ/EC/DD,	
E	08.05.20	0.032 dimension was 0.32	KJ/DD ox	17



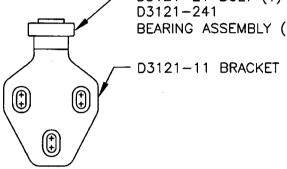
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CHECK	(ED_	APPROVED	DRAWING NO. REV.	E			
	#		D3121 SHEET 1 OF 1	10			
DATE			TITLE SCAL	LE			
07.1	1.07		BRACKET ASSEMBLY 1	:2			
Α		02.04.15	NEW ISSUE				
В		03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/I ADD -141/-143/-144/-145/-146	N			
С		04.02.17	ADD CLEARANCE; USE -241 BEARING				
D		06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000	0			
F		07.11.07	ADD TOLERANCE TO 0.032 (DETAIL B)				



- D3121-21 BOLT (1 D3121-241	)
BEARING ASSEMBLY	(1)

### D3121-041 BRACKET ASSEMBLY

(REPLACES PREMIER P/N B30-23000-33)

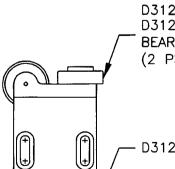


### D3121-21 BOLT (1) D3121-241 BEARING ASSEMBLY (1) (2 PLACES)

D3121-13/-14 **BRACKET** 

### D3121-043 (SHOWN) / D3121-044 (OPPOSITE) BRACKET ASSEMBLY

(REPLACES PREMIER P/N B30-23000-37/-38)



D3121-21 BOLT (1) D3121-241 BEARING ASSEMBLY (1) (2 PLACES)

D3121-15/-16 BRACKET

### D3121-045 (SHOWN) / D3121-046 (OPPOSITE) BRACKET ASSEMBLY

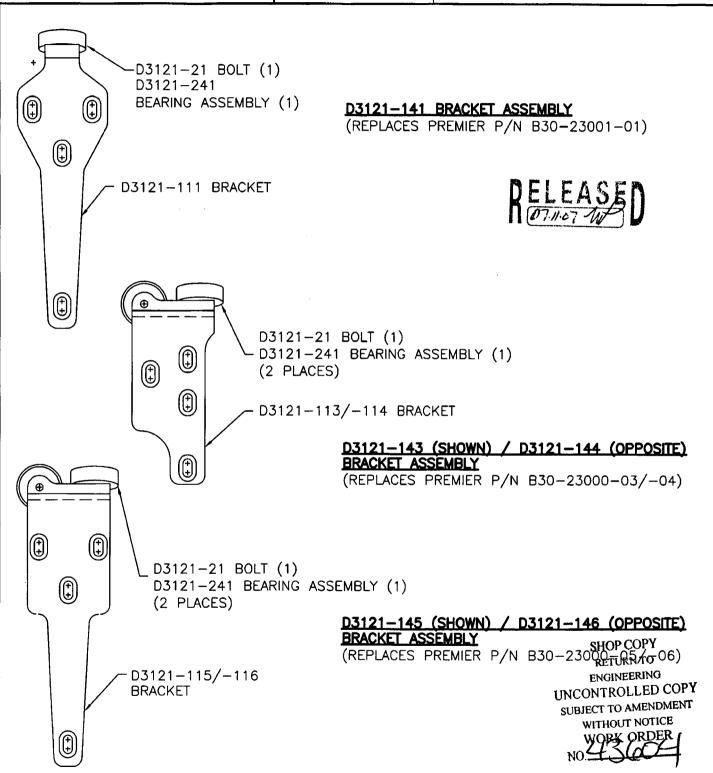
(REPLACES PREMIER P/N B30-23000-35/-36)

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4		D3121	SHEET 2 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2

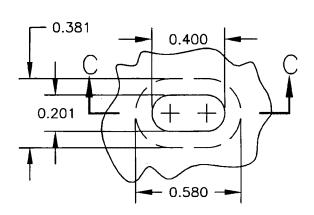


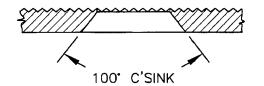
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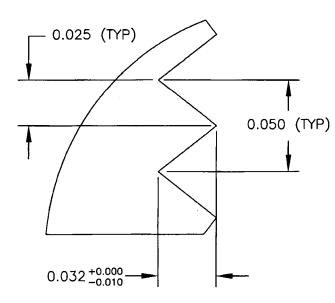
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DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:1

**DETAIL A:** SLOT DETAIL SCALE 2:1 VIEW ROTATED



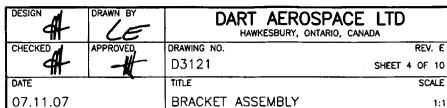


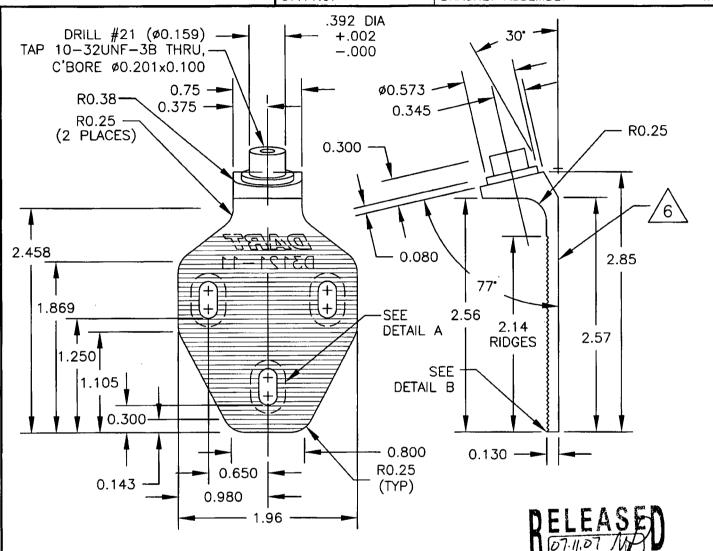
<u>DETAIL B:</u> RIDGE DETAIL PARTIAL SECTION SCALE 1:20



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### D3121-11 BRACKET

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi

MIN YIELD TENSILE = 100 ksi

2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

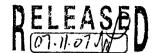
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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07.11.07		BRACKET ASSEMBLY	1:2



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DABT

D3121-13

1.220 ---- 1.800 -

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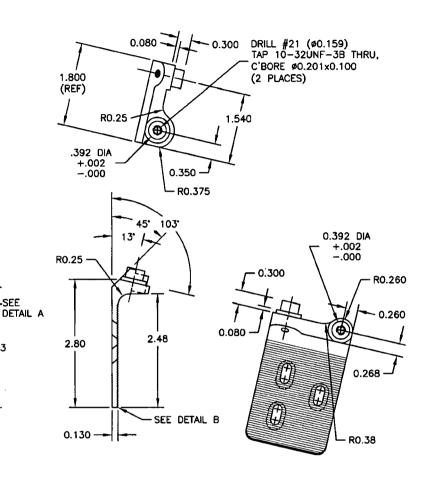
2.63

0.400 -

1.280

0.960

0.330





1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE STRENGTH = 150 ksi

MIN YIELD TENSILE STRENGTH = 100 ksi

2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

3) ALL DIMENSIONS ARE IN INCHES

4) BREAK ALL SHARP EDGES 0.005 TO 0.015

5) ENGRAVE DART P/N & LOGO AS SHOWN

6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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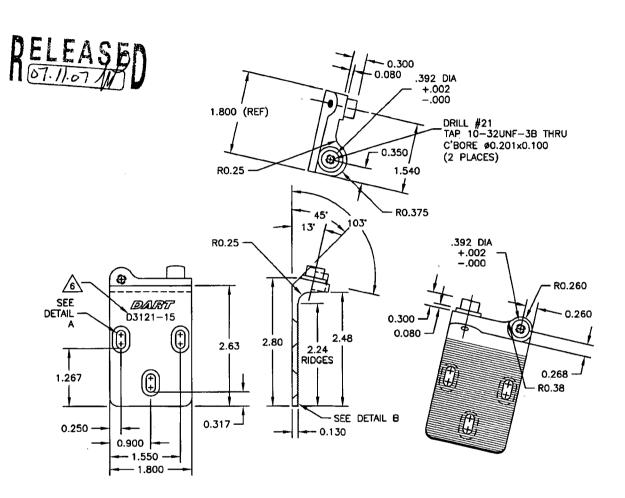
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1	91		D3121	SHEET 6 OF 10
r	DATE	<u> </u>	TITLE	SCALE
ı	07.11.07		BRACKET ASSEMBLY	1:2



# D3121-15 BRACKET (SHOWN) D3121-16 BRACKET (OPPOSITE)

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)

MIN ULTIMATE TENSILE = 150 ksi

MIN YIELD TENSILE = 100 ksi

2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

3) ALL DIMENSIONS ARE IN INCHES

4) BREAK ALL SHARP EDGES 0.005 TO 0.015

5) ENGRAVE DART P/N AND LOGO AS SHOWN

6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

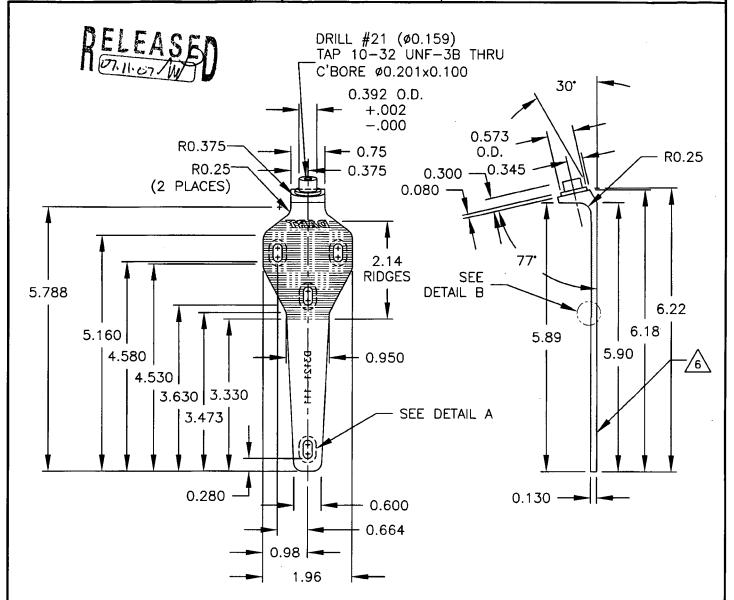
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4		D3121	SHEET 7 OF 10	
DATE		TITLE	SCALE	
07.11.07		BRACKET ASSEMBLY	1:2	



### **D3121-111 BRACKET**

- 1) REPLACES PREMIER P/N B32-23001-11
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B) SHOP COPY RETURN TO MIN ULTIMATE TENSILE = 150 ksi **ENGINEERING** MIN YIELD TENSILE = 100 ksi

3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHEWISE NOTED

- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

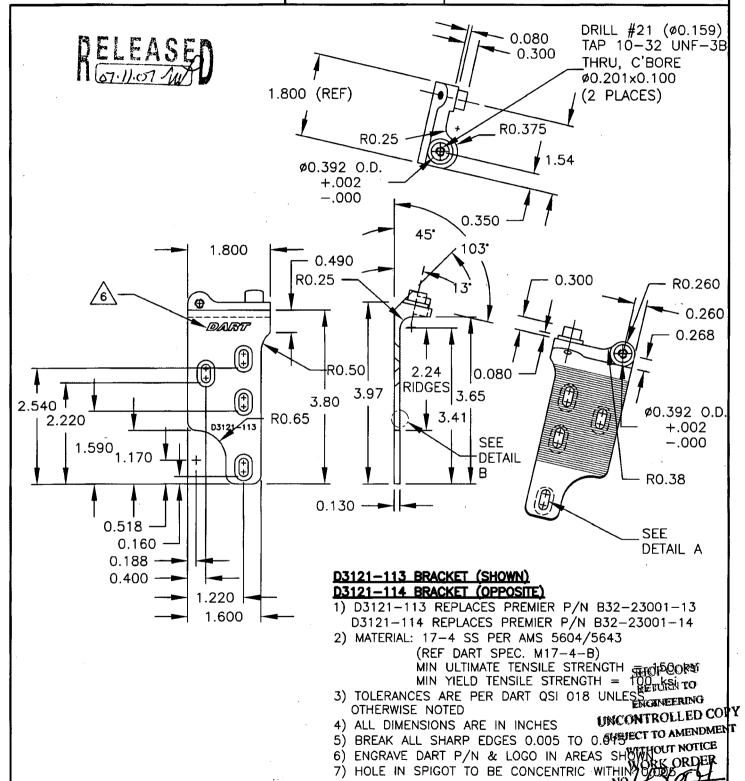
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98		D3121	SHEET 8 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2





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HAWKESBURY, ONTARIO, CANADA

REV. E

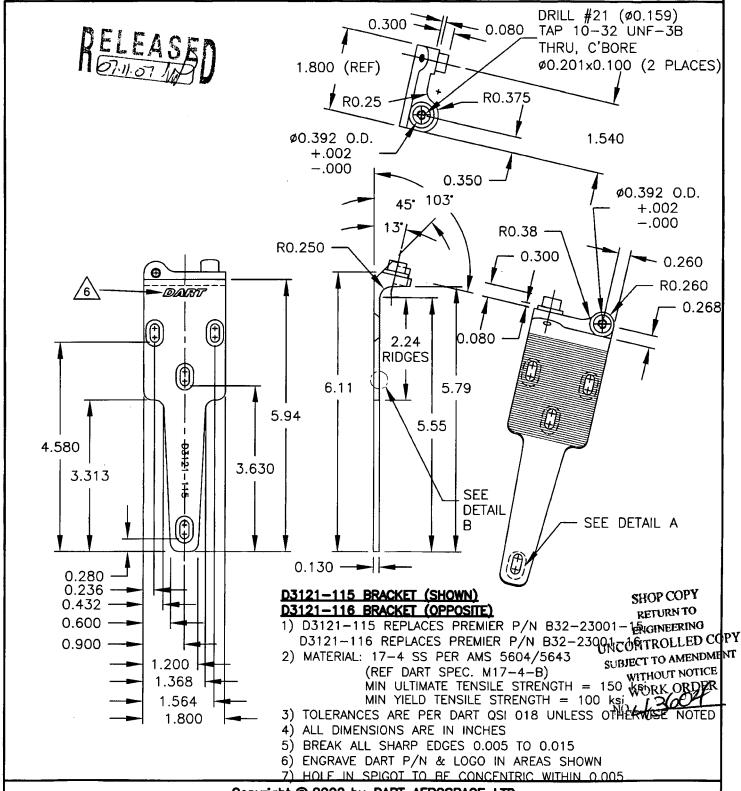
DATE

DATE

TITLE

BRACKET ASSEMBLY

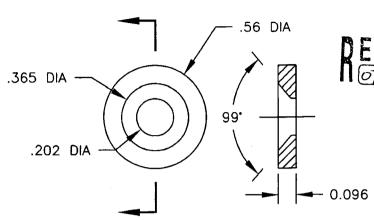
1:2



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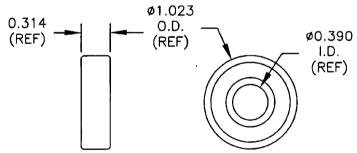


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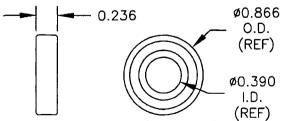
### D3121-17 WASHER (SCALE 2:1)

- 1) REPLACES PREMIER P/N B32-23001-17
- 2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015



#### D3121-19 BEARING (SCALE 1:1)

- 1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM FAFNIR P/N 9100KDD
- 2) ALL DIMENSIONS ARE IN INCHES



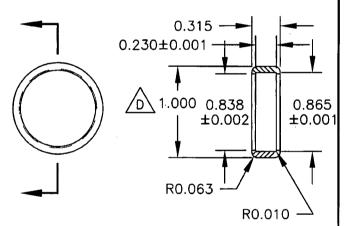
### D3121-23 BEARING (SCALE 1:1)

- 1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z OR KML P/N 6900-ZZ
- ALL DIMENSIONS ARE IN INCHES

# 0.375 TAP 10-32 UNF-3A 0.080 0.050 TO 0.060

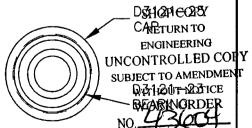
### D3121-21 BOLT (SCALE 1:1)

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015



### D3121-25 CAP (SCALE 1:1)

- 1) MATERIAL: DELRIN ROD, Ø1.25 (REF DART SPEC. M-DELRIN-R1.250)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES



D3121-241 BEARING ASSEBLY